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<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/996,202	CHEN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Camie S. Thompson	1774	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 5/31/05.
2. ☒ The allowed claim(s) is/are 1-6,8,9,11-18,20 and 21.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

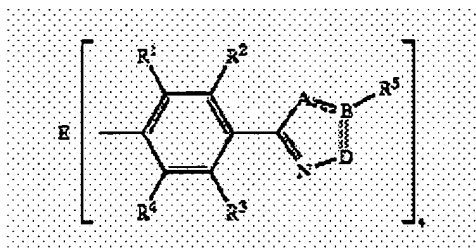
5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

**REASONS FOR ALLOWANCE**

1. The following is an examiner's statement of reasons for allowance: The prior art does not provide for a compound of the following formula:



wherein each of  $R^1$ - $R^4$  is, independently, H, substituted or unsubstituted  $C_{1-6}$  alkyl, OH,  $C_{1-6}$  alkoxy,  $N(R^6)(R^7)$ , in which each of  $R^6$  and  $R^7$  is, independently, H or substituted or unsubstituted  $C_{1-6}$  alkyl,  $NO_2$ , CN, or  $CO_2R^8$ , in which  $R^8$  is H or  $C_{1-6}$  alkyl; and

wherein  $R^5$  is H, substituted or unsubstituted  $C_{1-6}$  alkyl, substituted or unsubstituted  $C_{2-6}$  alkenyl, substituted or unsubstituted  $C_{2-6}$  alkynyl, unsubstituted  $C_{6-20}$  aryl or  $C_{6-20}$  aryl. Substituted with OH,  $C_{1-6}$  alkoxy or  $N(R^{26})(R^{27})$ ; alkylaryl in which the aryl moiety is substituted with one or more  $C_{1-6}$  alkyl groups further substituted with hydroxyl, protected hydroxyl, amino, protected amino, carboxy, protected carboxy, alkoxy, halo, CN, or  $NO_2$ , substituted or unsubstituted  $C_{4-20}$  heteroaryl,  $C_{10-20}$  diarylaminoaryl, or is absent, or B and D, together with  $R^5$  and  $R^{11}$ , are substituted or unsubstituted aryl; in which each of  $R^{26}$  and  $R^{27}$  is, independently, H, substituted or unsubstituted  $C_{1-6}$  alkyl, substituted or unsubstituted aryl, substituted or unsubstituted alkylaryl,  $NO_2$ , CH, or  $CO_2R^{28}$ , in which  $R^{28}$  is H or  $C_{1-6}$  alkyl;

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wherein A is O, S, N(R<sup>9</sup>) in which R<sup>9</sup> is absent, H, substituted and unsubstituted alkyl, or substituted or unsubstituted aryl, N=N, or N=C(R<sup>10</sup>) in which the C is adjacent to B and in which R<sup>10</sup> is substituted or unsubstituted alkyl, or substituted or unsubstituted aryl;

wherein B is C or N;

wherein D is N, NH, or C(R<sup>11</sup>) in which R<sup>11</sup> is substituted or unsubstituted alkyl, or substituted or unsubstituted aryl, or B and D, together with R<sup>5</sup> and R<sup>11</sup> are substituted or unsubstituted aryl; and

wherein E is C or Si;

provided that when A is O and D is N, then B is C and the floating double bond is between B and D;

further provided that when A is N(R<sup>9</sup>) and R<sup>9</sup> is absent, then B is N, R<sup>5</sup> is absent, D is NH, and the floating double bond is between A and B;

further provided that when A is N=N, then B is C, D is N, and the floating double bond is between B and D;

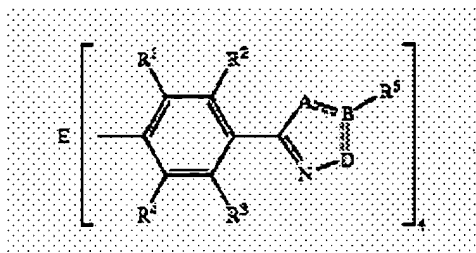
further provided that when A is N=C(R<sup>10</sup>), then B is N, R<sup>5</sup> is absent, D is C(R<sup>11</sup>), and the floating double bond is between B and D;

further provided that when A is N(R<sup>9</sup>) and R<sup>9</sup> is H, alkyl, or aryl, then B is C, D is C(R<sup>11</sup>), and the floating double bond is between B and D; and

further provided that when A is O or S and D is C(R<sup>11</sup>), then B is C and the floating double bond is between B and D.

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Additionally, the prior art does not provide for an electroluminescence device comprising a substrate, a hole transporting layer, an emitting layer, and an electron transporting layer, wherein at least one of the hole transporting layer, the emitting layer, and the electron transporting layer comprises a compound having the following formula:



wherein each of  $R^1$ - $R^4$  is, independently, H, substituted or unsubstituted  $C_{1-6}$  alkyl, OH,  $C_{1-6}$  alkoxy,  $N(R^6)(R^7)$ , in which each of  $R^6$  and  $R^7$  is, independently, H or substituted or unsubstituted  $C_{1-6}$  alkyl,  $NO_2$ , CN, or  $CO_2R^8$ , in which  $R^8$  is H or  $C_{1-6}$  alkyl; and

wherein  $R^5$  is H, substituted or unsubstituted  $C_{1-6}$  alkyl, substituted or unsubstituted  $C_{2-6}$  alkenyl, substituted or unsubstituted  $C_{2-6}$  alkynyl, unsubstituted  $C_{6-20}$  aryl or  $C_{6-20}$  aryl. Substituted with OH,  $C_{1-6}$  alkoxy or  $N(R^{26})(R^{27})$ ; alkylaryl in which the aryl moiety is substituted with one or more  $C_{1-6}$  alkyl groups further substituted with hydroxyl, protected hydroxyl, amino, protected amino, carboxy, protected carboxy, alkoxy, halo, CN, or  $NO_2$ , substituted or unsubstituted  $C_{4-20}$  heteroaryl,  $C_{10-20}$  diarylaminoaryl, or is absent, or B and D, together with  $R^5$  and  $R^{11}$ , are substituted or unsubstituted aryl; in which each of  $R^{26}$  and  $R^{27}$  is, independently, H, substituted or unsubstituted  $C_{1-6}$  alkyl, substituted or unsubstituted aryl, substituted or unsubstituted alkylaryl,  $NO_2$ , CH, or  $CO_2R^{28}$ , in which  $R^{28}$  is H or  $C_{1-6}$  alkyl;

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wherein A is O, S, N(R<sup>9</sup>) in which R<sup>9</sup> is absent, H, substituted and unsubstituted alkyl, or substituted or unsubstituted aryl, N=N, or N=C(R<sup>10</sup>) in which the C is adjacent to B and in which R<sup>10</sup> is substituted or unsubstituted alkyl, or substituted or unsubstituted aryl;

wherein B is C or N;

wherein D is N, NH, or C(R<sup>11</sup>) in which R<sup>11</sup> is substituted or unsubstituted alkyl, or substituted or unsubstituted aryl, or B and D, together with R<sup>5</sup> and R<sup>11</sup> are substituted or unsubstituted aryl; and

wherein E is C or Si;

provided that when A is O and D is N, then B is C and the floating double bond is between B and D;

further provided that when A is N(R<sup>9</sup>) and R<sup>9</sup> is absent, then B is N, R<sup>5</sup> is absent, D is NH, and the floating double bond is between A and B;

further provided that when A is N=N, then B is C, D is N, and the floating double bond is between B and D;

further provided that when A is N=C(R<sup>10</sup>), then B is N, R<sup>5</sup> is absent, D is C(R<sup>11</sup>), and the floating double bond is between B and D;

further provided that when A is N(R<sup>9</sup>) and R<sup>9</sup> is H, alkyl, or aryl, then B is C, D is C(R<sup>11</sup>), and the floating double bond is between B and D; and

further provided that when A is O or S and D is C(R<sup>11</sup>), then B is C and the floating double bond is between B and D.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
RENA DYE  
SUPERVISORY PATENT EXAMINER  
A-U-1774 8/18/05